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24Volt I/O Junction Box for 24 Volt D-Series Robots
Part # 1461974

Description:

The I/O Junction Box, item # 1461974 provides isolated I/O connections between 24 volt D-series robots and external devices such as solenoids and sensors.

Includes:

Qty	Description
1	24V Junction Box for D-Series Robot

Important Instructions and Specifications:

1. **CAUTION: Confirm that the D series robot to be used with the junction box is a 24 volt unit. If it is not, do not use this junction box or damage to the robot and/or junction box will result.**

2. **CAUTION: Cables cannot be connected or disconnected from the robot while the robot is on!!! If this occurs, the robot will be damaged.**

3. **CAUTION: Do not connect 24 volts to P_GND directly, (no load), or damage to I/O board may result.**

4. **Robot inputs must only be turned on by means of a dry contact switch. Do not apply voltage to robot input circuits.**

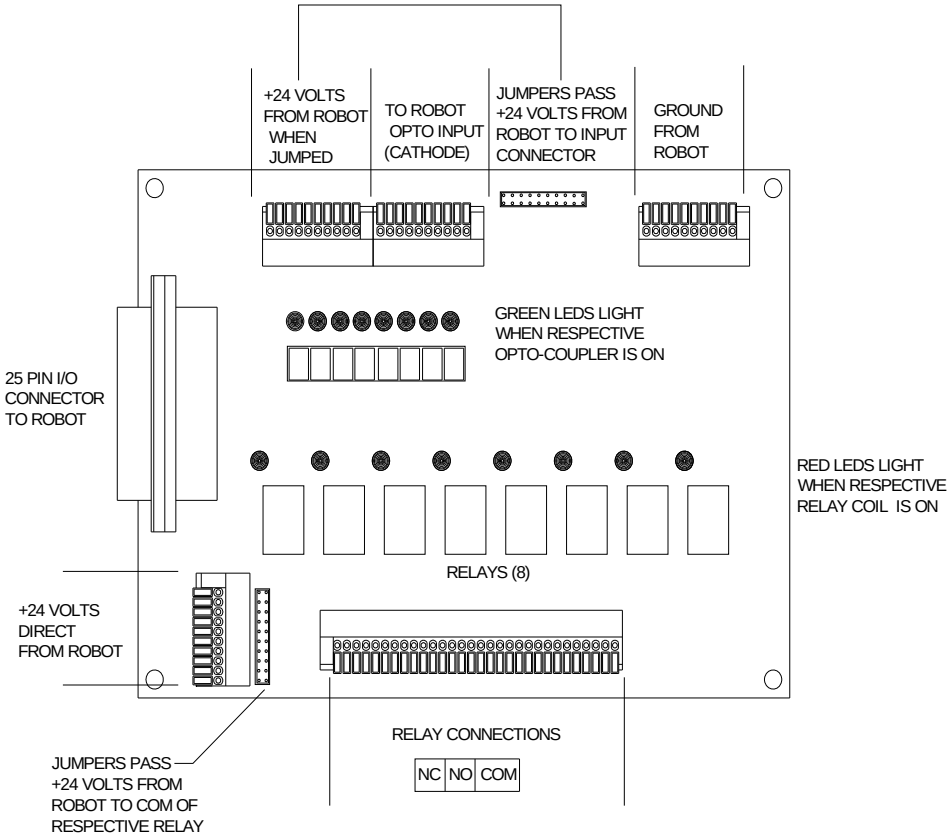
5. **Total output current from robot outputs should not exceed 250 mA.**

6. **Nominal coil current for relays: 15 mA**

7. **Relay contact rating: 3A @ 24 VDC**

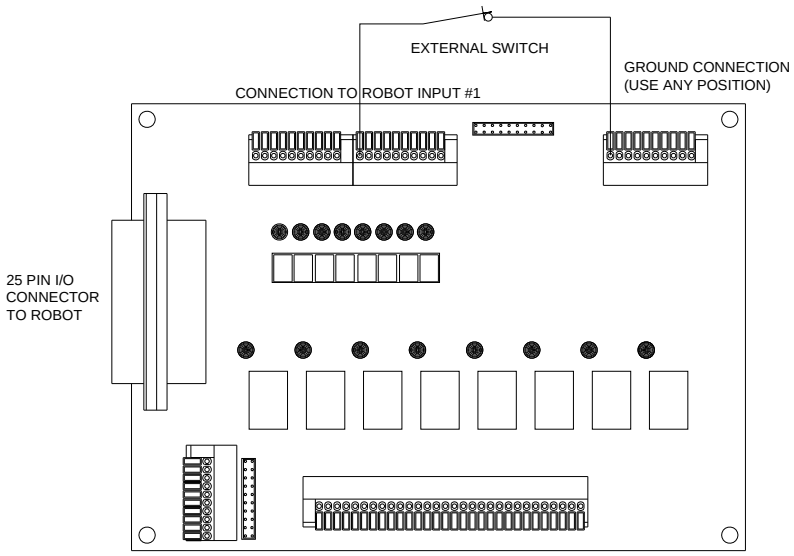
8. **Note inverted robot input logic: robot detects input as low (0) when input is turned on, (opto-isolator is on). High (1) is the default state, (opto-isolator is off).**

24 VOLT JUNCTION BOX INTERNAL LAYOUT



INPUT CIRCUITS

EXAMPLE 1: TURN ON ROBOT INPUT #1 USING AN EXTERNAL DRY CONTACT SWITCH

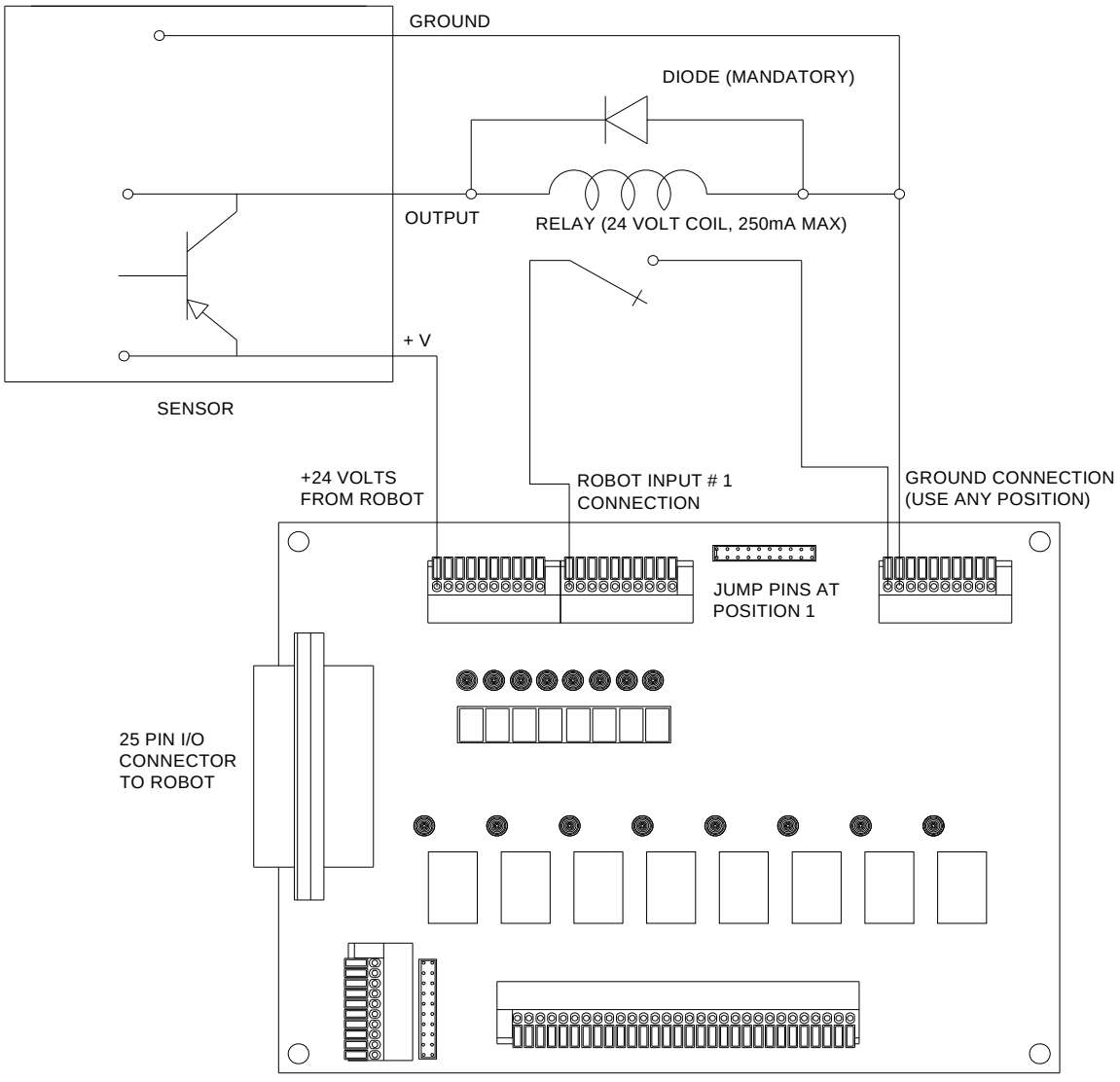


CONNECT INPUT #1 TO ONE SIDE OF THE EXTERNAL SWITCH
CONNECT GROUND TO THE OTHER SIDE OF THE SWITCH

INPUT CIRCUITS

EXAMPLE 2: TURN ON ROBOT INPUT #1 USING A 24 VOLT DC LOW LEVEL SENSOR WITH PNP SOURCING OUTPUT

RELAY COIL CURRENT MUST NOT EXCEED THE SENSOR OUTPUT LIMIT

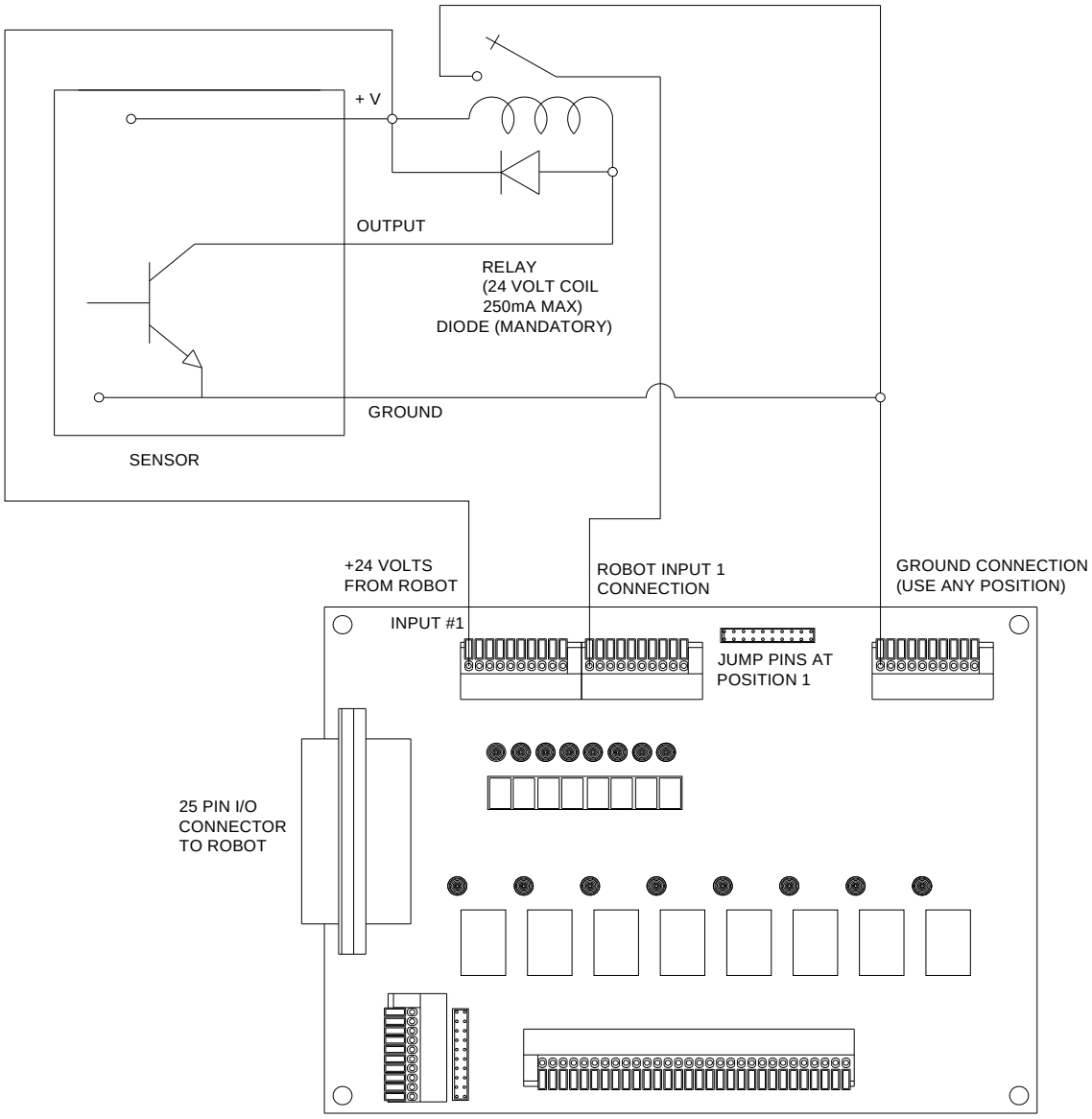


- PLACE A JUMPER ACROSS PINS AT "IN1"
- CONNECT +V OF THE SENSOR TO THE ROBOT +24 VOLT CONNECTOR
- CONNECT THE SENSOR GROUND TO THE JUNCTION BOX GROUND CONNECTOR
- CONNECT THE SENSOR OUTPUT (COLLECTOR) TO RELAY COIL (+)
- CONNECT THE (-) SIDE OF THE COIL TO THE ROBOT GROUND
- INSTALL CLAMPING DIODE ACROSS RELAY COIL AS SHOWN

INPUT CIRCUITS

EXAMPLE 3: TURN ON ROBOT INPUT # 1 USING A 24 VOLT DC LOW LEVEL SENSOR WITH NPN SINKING OUTPUT

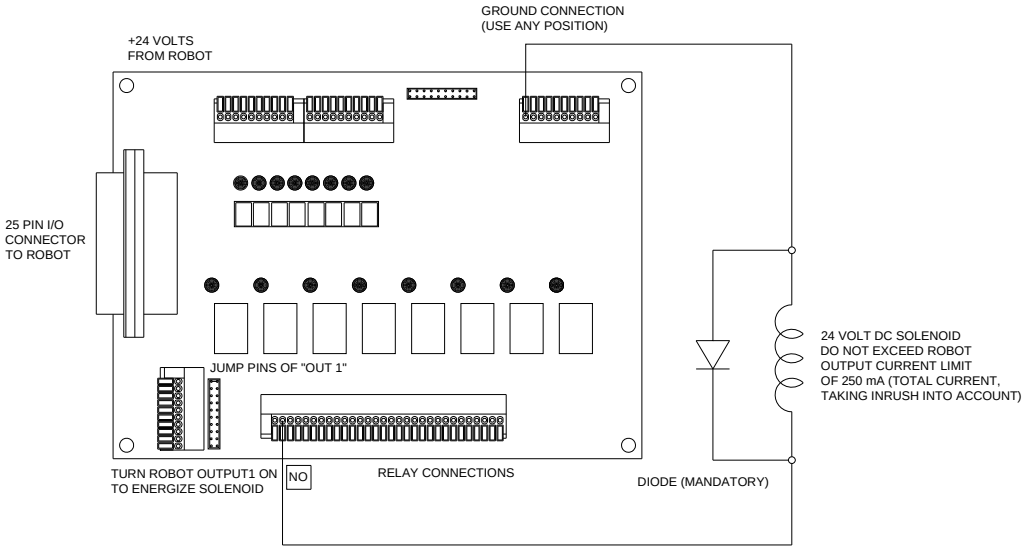
RELAY COIL CURRENT MUST NOT EXCEED THE SENSOR OUTPUT LIMIT



- PLACE A JUMPER ACROSS PINS AT "IN1"
- CONNECT +V OF THE SENSOR TO THE ROBOT +24 VOLT CONNECTOR
- CONNECT THE SENSOR GROUND TO THE JUNCTION BOX GROUND CONNECTOR
- CONNECT THE SENSOR OUTPUT (COLLECTOR) TO THE COIL (-)
- CONNECT THE (+) SIDE OF THE COIL TO + 24 VOLTS
- INSTALL CLAMPING DIODE ACROSS RELAY AS SHOWN

OUTPUT CIRCUITS

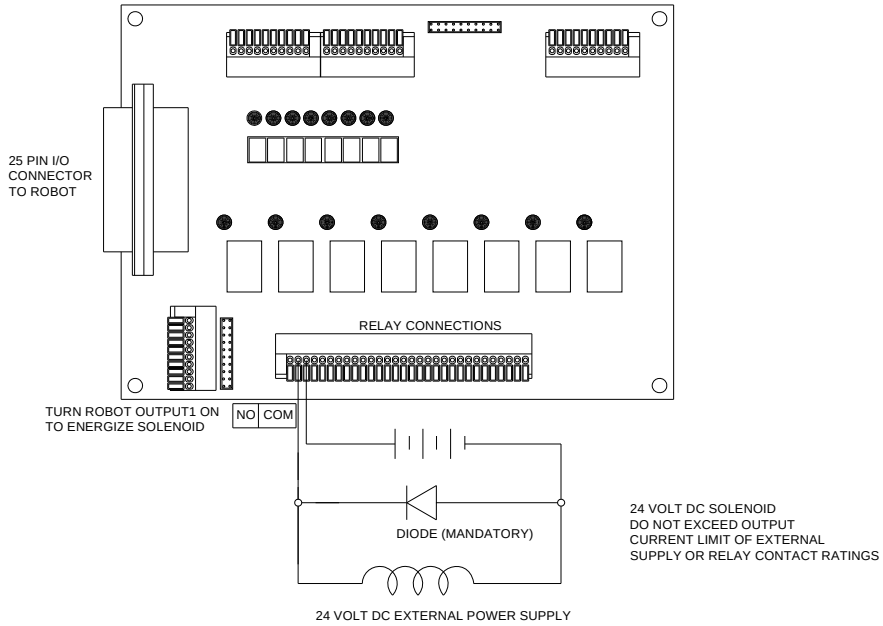
EXAMPLE 1: OPERATE A SOLENOID CONTROL VALVE USING
ROBOT OUTPUT #1 AND THE ROBOT INTERNAL POWER SUPPLY



- PLACE JUMPER ACROSS PINS AT "OUT 1" TO PUT +24 VOLTS ON COMMON (POLE) OF RELAY # 1
- CONNECT THE NORMALLY OPEN CONTACT OF OUTPUT #1 TO THE COIL (+)
- CONNECT THE OTHER SIDE OF THE COIL (-) TO THE GROUND CONNECTION
- PLACE CLAMPING DIODE ACROSS COIL AS SHOWN

OUTPUT CIRCUITS

EXAMPLE 2: OPERATE A SOLENOID CONTROL VALVE USING
ROBOT OUTPUT #1 AND AN EXTERNAL POWER SUPPLY



- CONNECT THE +24 VOLTS FROM THE EXTERNAL SUPPLY TO THE COMMON OF RELAY #1
- CONNECT THE NORMALLY OPEN CONTACT OF OUTPUT #1 TO THE COIL (+)
- CONNECT THE OTHER SIDE OF THE COIL (-) TO THE GROUND OF THE EXTERNAL SUPPLY
- PLACE CLAMPING DIODE ACROSS COIL AS SHOWN

ROBOT CONNECTOR PIN ASSIGNMENTS:

Pin #	*Description*	*Pin #*	*Description*
1	IN # 1	14	OUTPUT # 1
2	IN # 2	15	OUTPUT # 2
3	IN # 3	16	OUTPUT # 3
4	IN # 4	17	OUTPUT # 4
5	IN # 5	18	OUTPUT # 5
6	IN # 6	19	OUTPUT # 6
7	IN # 7	20	OUTPUT # 7
8	IN # 8	21	OUTPUT # 8
9	NC	22	NC
10	NC	23	NC
11	COM GND	24	+24V
12	COM GND	25	+24V
13	COM GND		

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